




UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,455	07/27/2001	Shoichi Yamazaki	2369.0110	7010
5514	7590	12/29/2005		
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER HARRINGTON, ALICIA M	
			ART UNIT 2873	PAPER NUMBER

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/915,455	Applicant(s) YAMAZAKI, SHOICHI 	
	Examiner Alicia M. Harrington	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-23, 24/7-10, 24/12-15, 24/18-23 and 26-28 is/are allowed.
- 6) ☒ Claim(s) 1-3, 31-33, 24/1-3 is/are rejected.
- 7) ☒ Claim(s) 4-6, 24/4, 24/6, 25, 29, 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0505</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The Examiner has considered the information disclosure statement filed on 5/13/05.

Claim Objections

2. The claims are objected to because they include reference characters which are not enclosed within parentheses.

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 24/1-3 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (JP 2000-249968)

Regarding claim 1, Takagi discloses an image display apparatus comprising:

reflective display means (30 or 51);

illumination means for illuminating the display means (11 or 71);

an illumination optical system for guiding light from the illumination means to the display means (see figures 2 ,4 or 8);

a display optical system for guiding light from the display means to an observation position;

a first optical member used in common by the illumination optical system and the display optical system and having only one surface of an optical surface A functioning as a reflecting surface in association with the illumination optical system and as a transmission surface in association with the display optical system (L1, 17 or 73a); and

a second optical member having a refractive power and separated from said first optical member with an air-gap there between (12,22, or 52), wherein light from said illumination means is reflected by said optical surface A and is guided to said display means,

wherein light from said display means is transmitted through said optical surface A and then is transmitted through said second optical member and guided to the observation position,

wherein, when a reference ray is defined as a ray that is part of illumination light from said illumination means that is reflected at the center of said display means and emerges therefrom and is incident on the center of a pupil and wherein the reference ray is substantially perpendicularly incident on said display means to emerge substantially perpendicularly therefrom and said display optical system includes a

plurality of reflecting surfaces of decentered curvature surfaces in said second optical member. However, Takagi fails to specifically disclose the following condition is satisfied, $20 \text{ deg} < \alpha < 70 \text{ deg}$, where, when in said illumination optical system the reference ray is reflected at said optical surface A, α is an angle defined by the incident light and the reflected light. Although, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the claimed range, since geometrical laws of physics govern the angle of incidence and angle of reflection/or refraction and to construct an optical element with the claimed angular range would have been within ordinary skill. Additionally, it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 2, Takagi discloses the image display apparatus according to Claim 1, wherein the optical surface A in the illumination optical system is a reflective curvature surface having a positive refracting power on a local meridional section (a plane including incident light and exit light of the reference ray)- positive power curvature.

Regarding claim 3, Takagi discloses the image display apparatus according to Claim 1, wherein the illumination light source means is an RGB time division light source and the display means displays images of R, G, and B in time division in synchronism with emission of color light beams of R, G, and B from the RGB time division light source (see section 28).

Regarding claims 24/1-3- see figures 2,4, or 8.

Claims 31-33 are substantially equivalent to claims 1-3 and thus see Examiners rejection notes in claims 1-3.

Allowable Subject Matter

5. Claims 7-23,24/7-10,24/12-15, 24/18-23,26-28 is allowed.
6. Claims 4-6,24/4, 24/6,25,29,30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Harrington whose telephone number is 571 272 2330. The examiner can normally be reached on Monday - Thursday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571 272 2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 09/915,455
Art Unit: 2873

Page 6

AMH 

Alicia M Harrington
Primary Examiner
Art Unit 2873